PO Box 1370
Artesia, NM 88211-1370
(575) 748-1288

COG OPERATING, L.
RECEIVED
JAN 16 2013
ARTESIA WEST

January 4, 2013

15-40816

COG, LLC
One Concho Center
600 W. Illinois Ave.
Midland, TX 79701

RE: Diamondback 22 St Com #4H
20' FNL & 1393' FWL
Sec. 22, T26S, R28E
Eddy County, New Mexico

Dear Sir,

The attached is the Deviation Survey for the above captioned well.

Very truly yours,

Eddie LaRue
Operations Manager

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 4th day of January, 2013.

Notary Public

OFFICIAL SEAL
REGINIA L. GARNER
NOTARY PUBLIC - STATE OF NEW MEXICO
My commission expires Aug. 30, 2016

Pason DataHub Deviation Survey
Well Dossier 5138202 - Diamondback 22 state com 4h

# Date	Depth	Deviation	Direction	TVD
12/10/2012	176	0.70	0.00	0.00
12/10/2012	326	1.50	0.00	0.00
12/11/2012	461	2.30	227.00	460.88
12/12/2012	550	2.60	234.40	549.79
12/12/2012	740	2.60	249.90	739.90
12/12/2012	931	1.30	244.40	930.40
12/12/2012	1026	1.40	242.20	1025.00
12/12/2012	1217	1.10	267.10	1216.00
12/12/2012	1408	1.10	223.20	1407.25
12/12/2012	1504	1.80	138.10	1503.23
12/12/2012	1599	1.50	138.60	1598.16
12/12/2012	1645	1.80	96.80	1694.10
12/13/2012	1885	4.30	52.80	1883.80
12/13/2012	1981	3.20	8.70	1979.60
12/13/2012	2075	1.90	329.30	2073.00
12/13/2012	2266	2.80	11.70	2264.00
12/13/2012	2361	0.70	274.40	2629.14
12/15/2012	2647	0.50	0.00	0.00
12/15/2012	2964	0.60	0.00	0.00
12/15/2012	3442	1.00	0.00	0.00
12/15/2012	3942	0.90	0.00	0.00
12/15/2012	4442	1.80	0.00	0.00
12/16/2012	4586	1.20	0.00	0.00
12/16/2012	4682	1.90	0.00	0.00
12/16/2012	4778	1.50	0.00	0.00
12/16/2012	5001	1.30	0.00	0.00
12/16/2012	5193	1.40	0.00	0.00
12/16/2012	5415	1.40	0.00	0.00
12/16/2012	5510	1.40	0.00	0.00
12/17/2012	6010	1.60	0.00	0.00
12/17/2012	6273	1.90	0.00	0.00
12/17/2012	6370	3.00	0.00	0.00
12/17/2012	6464	2.50	0.00	0.00
12/17/2012	6560	2.10	0.00	0.00
12/17/2012	6846	2.70	0.00	0.00
12/18/2012	7069	3.10	0.00	0.00
12/19/2012	7152	31.10	134.80	7731.91
12/19/2012	7434	4.20	137.60	7430.20
12/19/2012	7466	7.00	129.90	7462.05
12/19/2012	7497	9.80	122.16	7492.71
12/19/2012	7529	12.00	122.50	7524.13
12/19/2012	7561	14.40	122.80	7555.28
12/19/2012	7625	19.00	126.50	7616.00
12/19/2012	7689	24.30	127.50	7676.15

# Date	Depth	Deviation	Direction	TVD
12/19/2012	7721	27.70	131.80	7704.91
12/20/2012	7880	40.20	139.70	7808.94
12/20/2012	8007	63.00	143.40	7904.84
12/21/2012	8039	68.10	146.00	7922.08
12/21/2012	8070	69.50	147.80	7933.29
12/21/2012	8102	71.40	146.70	7944.00
12/21/2012	8134	74.00	145.00	7953.00
12/21/2012	8293	85.20	145.00	7976.00
12/21/2012	8547	87.40	145.10	7982.21
12/21/2012	8643	89.40	148.10	7984.89
12/22/2012	8738	90.50	152.30	7984.97
12/22/2012	8834	89.00	152.90	7985.00
12/23/2012	9121	85.00	162.00	7990.00
12/23/2012	9216	84.10	168.70	7999.08
12/24/2012	9406	87.20	183.30	8012.27
12/24/2012	9502	88.70	184.70	8015.71
12/24/2012	9597	89.90	185.00	8016.87
12/24/2012	9788	87.20	184.30	8022.10
12/24/2012	9979	89.70	183.80	8027.20
12/24/2012	10074	89.20	183.80	8028.11
12/24/2012	10216	89.10	183.60	8029.53
12/24/2012	10361	88.30	183.40	8032.37
12/24/2012	10647	88.50	183.30	8040.52
12/25/2012	10743	89.30	182.90	8042.36
12/25/2012	11029	89.00	182.40	8040.61
12/25/2012	11124	88.50	182.20	8042.69
12/25/2012	11316	88.70	182.00	8047.88
12/25/2012	11411	88.90	181.90	8049.87
12/25/2012	11506	89.10	182.40	8051.53
12/25/2012	11602	89.70	1832.40	8052.53
12/25/2012	11793	91.60	181.30	8050.27
12/26/2012	11888	89.90	180.10	8049.03
12/26/2012	11983	89.60	180.10	8049.44
12/26/2012	12079	89.30	179.90	8050.37
12/30/2012	11796	84.60	185.40	8056.26
12/30/2012	11891	85.60	188.20	8064.38
12/31/2012	11985	86.50	186.30	8070.00
12/31/2012	12176	87.80	187.00	8079.00
12/31/2012	12271	89.70	185.60	8081.51
12/31/2012	12462	89.90	185.60	8082.18
12/31/2012	12558	91.10	186.10	8081.34
1/1/2013	12653	92.20	186.30	8078.60
1/1/2013	12749	92.50	186.60	8074.67
1/1/2013	12776	92.70	186.30	8073.44

EOF

VAUGHN ENERGY SERVICES

A GYRO TECHNOLOGIES INC. COMPANY

PO Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

January 2, 2013

RECEIVED
APR 15 2013
NMOCD ARTESIA

Concho Resources, Inc.
One Concho Center
600 W. Illinois Avenue
Midland, Texas 79701

Attn: Kanicia Castillo

RE: **Diamondback 22 State Com No. 004H**

Please find enclosed a copy of the survey from 0.00' to 7320.00' ran on the above referenced well.

Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
§
COUNTY OF NUECES §

This instrument was acknowledged before me on the 2nd day of January A.D., 2013, by Keith Havelka.

Laura Ballew
Notary Public, State of Texas

LAURA BALLEW
Notary Public, State of Texas
My Commission Expires
January 28, 2014

Company: COG Operating LLC (Concho)
Lease/Well: Diamondback 22 State Com / No. 004H
Location: SEC22 T26S R28E
Rig Name: Silver Oak 7
State/County: New Mexico / Eddy
Latitude: 32.04, Longitude: -104.08
GRID North is 0.14 Degrees East of True North
VS-Azi: 173.00 Degrees

Depth Reference : RKB = 18'

DRILLOG HA GYRO SURVEY CALCULATIONS
Filename: gyro survey.ut
Minimum Curvature Method
Report Date/Time: 1/2/2013 / 10:14

Vaughn Energy Services
Gardendale, Texas
(432) 563-5444
Surveyor: Colby Ware
Diamondback 22 State Com No. 004H / API 30-015-40816

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.27	143.94	100.00	-0.19	0.14	0.24	143.94	0.27
200.00	0.94	155.55	199.99	-1.13	0.62	1.29	151.33	0.68
300.00	1.37	161.12	299.97	-3.01	1.35	3.30	155.93	0.45
400.00	1.80	186.68	399.94	-5.71	1.55	5.91	164.81	0.82
500.00	2.15	201.92	499.88	-9.01	0.67	9.03	175.77	0.63
600.00	2.49	217.16	599.80	-12.48	-1.35	12.55	186.16	0.70
700.00	2.65	228.27	699.70	-15.75	-4.38	16.35	195.55	0.52
800.00	2.80	239.39	799.58	-18.53	-8.21	20.27	203.89	0.55
900.00	2.04	242.22	899.49	-20.61	-11.89	23.79	209.98	0.77
1000.00	1.29	245.06	999.45	-21.91	-14.49	26.27	213.47	0.76
1100.00	1.27	260.27	1099.43	-22.57	-16.60	28.02	216.33	0.34
1200.00	1.26	265.48	1199.40	-22.85	-18.79	29.58	219.44	0.12
1300.00	1.25	255.95	1299.38	-23.20	-20.95	31.26	222.08	0.21
1400.00	1.23	206.42	1399.36	-24.43	-22.48	33.20	222.63	1.04
1500.00	1.70	165.33	1499.33	-26.83	-22.59	35.07	220.09	1.12
1600.00	2.17	134.23	1599.27	-29.59	-20.85	36.20	215.17	1.13
1700.00	2.62	81.72	1699.19	-30.58	-17.23	35.10	209.40	2.16
1800.00	3.07	49.20	1799.08	-28.50	-12.94	31.30	204.41	1.65

VES Survey Date: 12/17/2012

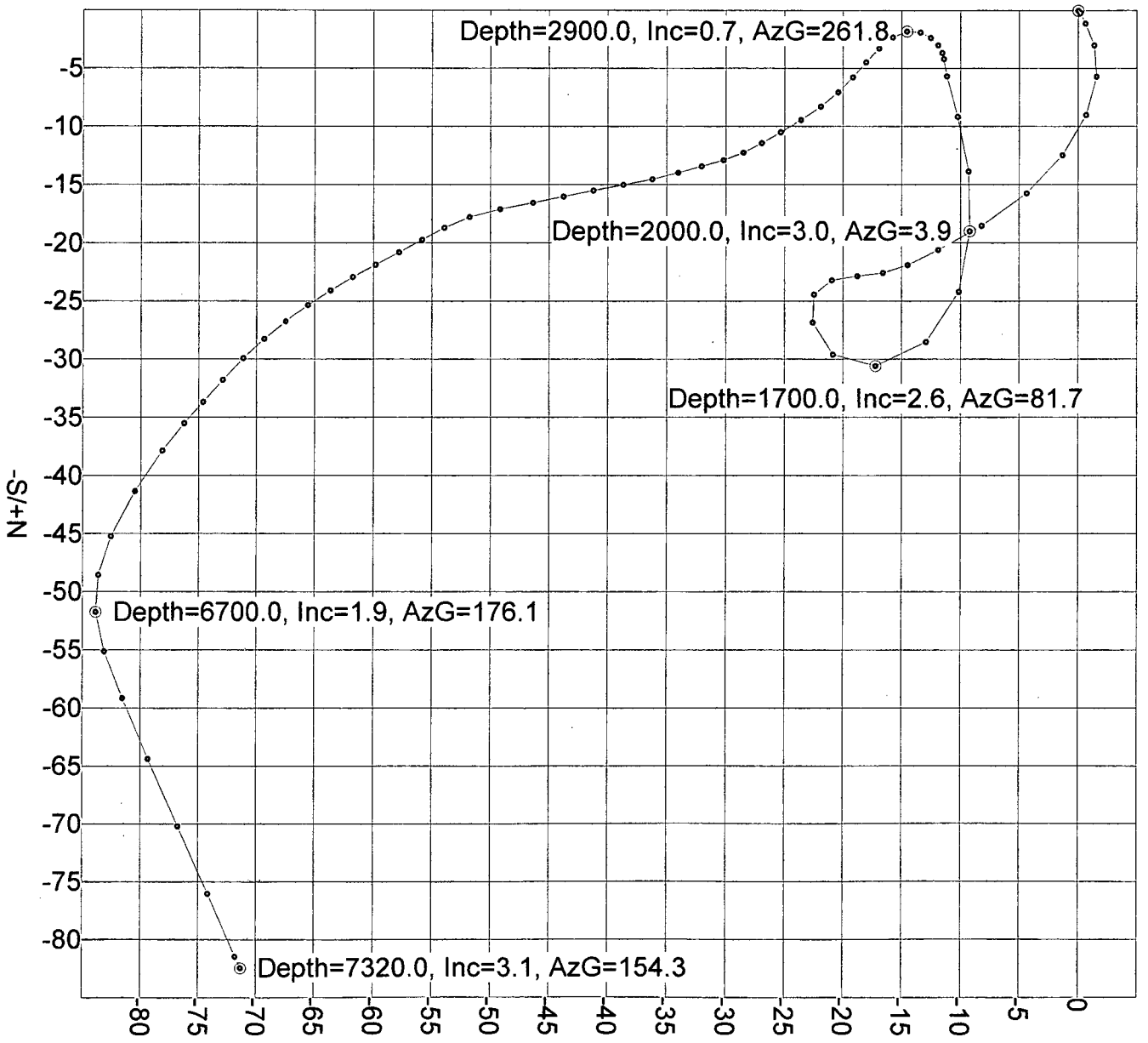
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	3.06	16.55	1898.94	-24.20	-10.15	26.24	202.75	1.72
2000.00	3.04	3.90	1998.80	-19.00	-9.21	21.11	205.86	0.67
2100.00	2.86	353.59	2098.67	-13.87	-9.31	16.71	213.86	0.56
2200.00	2.68	343.28	2198.55	-9.16	-10.26	13.75	228.25	0.53
2300.00	1.47	349.16	2298.49	-5.66	-11.17	12.52	243.13	1.23
2400.00	0.25	355.05	2398.47	-4.18	-11.43	12.17	249.90	1.22
2500.00	0.37	340.18	2498.47	-3.66	-11.56	12.13	252.45	0.15
2600.00	0.50	325.31	2598.47	-2.99	-11.92	12.29	255.89	0.16
2700.00	0.55	307.36	2698.46	-2.35	-12.54	12.76	259.40	0.17
2800.00	0.60	289.41	2798.46	-1.88	-13.42	13.56	262.02	0.19
2900.00	0.72	261.78	2898.45	-1.80	-14.55	14.66	262.96	0.34
3000.00	0.84	234.16	2998.44	-2.32	-15.76	15.93	261.64	0.39
3100.00	0.90	226.93	3098.43	-3.28	-16.93	17.25	259.03	0.13
3200.00	0.97	219.70	3198.42	-4.47	-18.04	18.59	256.09	0.13
3300.00	1.01	222.11	3298.40	-5.77	-19.18	20.03	253.25	0.06
3400.00	1.06	226.53	3398.39	-7.06	-20.44	21.63	250.94	0.09
3500.00	1.14	233.35	3498.37	-8.29	-21.91	23.42	249.27	0.15
3600.00	1.21	238.17	3598.35	-9.44	-23.60	25.42	248.20	0.13
3700.00	1.11	239.23	3698.33	-10.50	-25.34	27.42	247.49	0.10
3800.00	1.01	240.29	3798.31	-11.43	-26.93	29.26	247.00	0.10
3900.00	1.03	244.68	3898.30	-12.25	-28.51	31.03	246.75	0.08
4000.00	1.05	253.08	3998.28	-12.90	-30.20	32.84	246.87	0.15
4100.00	1.14	255.16	4098.26	-13.42	-32.03	34.73	247.27	0.10
4200.00	1.23	253.25	4198.24	-13.99	-34.02	36.78	247.65	0.10
4300.00	1.36	258.26	4298.21	-14.54	-36.21	39.02	248.13	0.17
4400.00	1.49	259.26	4398.18	-15.02	-38.66	41.47	248.76	0.13
4500.00	1.49	259.31	4498.15	-15.51	-41.21	44.03	249.38	0.00
4600.00	1.49	257.36	4598.12	-16.03	-43.76	46.60	249.88	0.05
4700.00	1.58	259.27	4698.08	-16.57	-46.38	49.25	250.34	0.10
4800.00	1.67	259.18	4798.04	-17.10	-49.17	52.06	250.82	0.09
4900.00	1.45	250.79	4898.00	-17.79	-51.79	54.76	251.04	0.32
5000.00	1.23	242.40	4997.97	-18.70	-53.93	57.08	250.87	0.29
5100.00	1.27	241.10	5097.95	-19.73	-55.85	59.23	250.54	0.05
5200.00	1.30	241.80	5197.93	-20.81	-57.82	61.45	250.21	0.04
5300.00	1.28	241.98	5297.90	-21.87	-59.81	63.68	249.92	0.03
5400.00	1.25	240.16	5397.88	-22.93	-61.74	65.86	249.62	0.05
5500.00	1.29	238.24	5497.85	-24.07	-63.65	68.05	249.28	0.06
5600.00	1.34	234.33	5597.83	-25.35	-65.55	70.28	248.86	0.10
5700.00	1.37	233.00	5697.80	-26.74	-67.45	72.56	248.37	0.04

VES Survey Date: 12/17/2012

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5800.00	1.40	229.67	5797.77	-28.25	-69.33	74.87	247.83	0.09
5900.00	1.45	225.09	5897.74	-29.93	-71.16	77.19	247.19	0.12
6000.00	1.49	222.52	5997.70	-31.78	-72.93	79.55	246.45	0.08
6100.00	1.43	221.20	6097.67	-33.68	-74.63	81.88	245.71	0.07
6200.00	1.37	221.89	6197.64	-35.51	-76.25	84.11	245.03	0.07
6300.00	2.08	217.06	6297.60	-37.84	-78.14	86.82	244.16	0.72
6400.00	2.78	212.22	6397.51	-41.34	-80.53	90.52	242.83	0.74
6500.00	2.27	202.32	6497.41	-45.23	-82.57	94.15	241.29	0.67
6600.00	1.77	192.43	6597.35	-48.57	-83.66	96.73	239.86	0.61
6700.00	1.93	176.12	6697.30	-51.75	-83.88	98.55	238.33	0.55
6800.00	2.08	159.80	6797.24	-55.13	-83.13	99.75	236.45	0.59
6900.00	2.86	157.71	6897.14	-59.15	-81.56	100.75	234.05	0.79
7000.00	3.64	156.63	6996.98	-64.38	-79.35	102.18	230.95	0.78
7100.00	3.65	155.25	7096.78	-70.19	-76.76	104.01	227.56	0.09
7200.00	3.66	156.88	7196.57	-76.02	-74.17	106.21	224.30	0.10
7300.00	3.16	155.90	7296.40	-81.47	-71.79	108.59	221.39	0.50
7320.00	3.14	154.30	7316.37	-82.46	-71.33	109.03	220.86	0.45

VES Survey Date: 12/17/2012

Vaughn Energy Services
Gardendale, Texas
(432) 563-5444
Surveyor: Colby Ware
Diamondback 22 State Com No. 004H / API 30-015-40816



VES Survey Date: 12/17/2012

CONCHO

RECEIVED
APR 15 2013
NMOCD ARTESIA

COG Operating, LLC

Eddy County, NM (NAD83)
Diamondback 22 State Com 4H
4H

Wellbore #1

Design: Surveys

Standard Survey Report

02 January, 2013

CHILDRESS DIRECTIONAL DRILLING

Company:	COG Operating, LLC	**Local Co-ordinate Reference:**	Site Diamondback 22 State Com 4H
Project:	Eddy County, NM (NAD83)	**TVD Reference:**	Well @ 3011.00usft (Silver Oak 7)
Site:	Diamondback 22 State Com 4H	**MD Reference:**	Well @ 3011.00usft (Silver Oak 7)
Well:	4H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Surveys	**Database:**	EDM 5000.1 Single User Db

Project Eddy County, NM (NAD83)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Diamondback 22 State Com 4H

Site Position:		**Northing:**	376,604.04 usft	**Latitude:**	32° 2' 6.393 N
From:	Map	**Easting:**	620,192.20 usft	**Longitude:**	104° 4' 43.885 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.13 °

Well 4H

Well Position	**+N/-S**	0.00 usft	**Northing:**	376,604.04 usft	**Latitude:**	32° 2' 6.393 N
	+E/-W	0.00 usft	**Easting:**	620,192.20 usft	**Longitude:**	104° 4' 43.885 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	2,993.00 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/09/12	7.62	59.89	48,301

Design Surveys

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	173.00

Survey Program **Date** 01/02/13

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	7,320.00	VES gyro surveys (Wellbore #1)	NS-GYRO-MS	North sensing gyrocompassing m/s
7,370.00	12,819.00	Childress MWD (Wellbore #1)	MWD	MWD - CHILDRESS MWD

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.27	143.94	100.00	-0.19	0.14	0.21	0.27	0.27	0.00
200.00	0.94	155.55	199.99	-1.13	0.62	1.19	0.68	0.67	11.61
300.00	1.37	161.12	299.97	-3.01	1.34	3.15	0.44	0.43	5.57
400.00	1.80	186.68	399.94	-5.70	1.55	5.84	0.82	0.43	25.56
500.00	2.15	201.92	499.88	-9.00	0.66	9.01	0.63	0.35	15.24
600.00	2.49	217.16	599.80	-12.47	-1.35	12.21	0.70	0.34	15.24
700.00	2.65	228.27	699.70	-15.74	-4.39	15.09	0.52	0.16	11.11
800.00	2.80	239.39	799.58	-18.52	-8.21	17.38	0.55	0.15	11.12
900.00	2.04	242.22	899.49	-20.59	-11.89	18.99	0.77	-0.76	2.83

Company:	COG Operating, LLC	**Local Co-ordinate Reference:**	Site Diamondback 22 State Com 4H
Project:	Eddy County, NM (NAD83)	**TVD Reference:**	Well @ 3011.00usft (Silver Oak 7)
Site:	Diamondback 22 State Com 4H	**MD Reference:**	Well @ 3011.00usft (Silver Oak 7)
Well:	4H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Surveys	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.00	1.29	245.06	999.45	-21.90	-14.49	19.97	0.75	-0.75	2.84
1,100.00	1.27	260.27	1,099.43	-22.56	-16.60	20.37	0.34	-0.02	15.21
1,200.00	1.26	265.48	1,199.40	-22.83	-18.79	20.37	0.12	-0.01	5.21
1,300.00	1.25	255.95	1,299.38	-23.19	-20.94	20.46	0.21	-0.01	-9.53
1,400.00	1.23	206.42	1,399.36	-24.41	-22.48	21.49	1.04	-0.02	-49.53
1,500.00	1.70	165.33	1,499.33	-26.81	-22.58	23.86	1.12	0.47	-41.09
1,600.00	2.17	134.23	1,599.27	-29.56	-20.85	26.80	1.13	0.47	-31.10
1,700.00	2.62	81.72	1,699.20	-30.55	-17.23	28.23	2.16	0.45	-52.51
1,800.00	3.07	49.20	1,799.08	-28.48	-12.94	26.69	1.65	0.45	-32.52
1,900.00	3.06	16.55	1,898.94	-24.17	-10.15	22.75	1.72	-0.01	-32.65
2,000.00	3.04	3.90	1,998.80	-18.96	-9.21	17.70	0.67	-0.02	-12.65
2,100.00	2.86	353.59	2,098.67	-13.84	-9.31	12.60	0.56	-0.18	-10.31
2,200.00	2.68	343.28	2,198.55	-9.12	-10.26	7.80	0.53	-0.18	-10.31
2,300.00	1.47	349.16	2,298.49	-5.62	-11.17	4.22	1.23	-1.21	5.88
2,400.00	0.25	355.05	2,398.47	-4.14	-11.43	2.72	1.22	-1.22	5.89
2,500.00	0.37	340.18	2,498.47	-3.62	-11.56	2.19	0.14	0.12	-14.87
2,600.00	0.50	325.31	2,598.47	-2.96	-11.92	1.49	0.17	0.13	-14.87
2,700.00	0.55	307.36	2,698.47	-2.31	-12.55	0.76	0.17	0.05	-17.95
2,800.00	0.60	289.41	2,798.46	-1.84	-13.42	0.20	0.19	0.05	-17.95
2,900.00	0.72	261.78	2,898.45	-1.76	-14.54	-0.02	0.34	0.12	-27.63
3,000.00	0.84	234.16	2,998.45	-2.28	-15.76	0.34	0.39	0.12	-27.62
3,100.00	0.90	226.93	3,098.43	-3.25	-16.92	1.16	0.12	0.06	-7.23
3,200.00	0.97	219.70	3,198.42	-4.43	-18.04	2.20	0.14	0.07	-7.23
3,300.00	1.01	222.11	3,298.41	-5.74	-19.17	3.36	0.06	0.04	2.41
3,400.00	1.06	226.53	3,398.39	-7.03	-20.43	4.49	0.09	0.05	4.42
3,500.00	1.14	233.35	3,498.37	-8.26	-21.90	5.53	0.15	0.08	6.82
3,600.00	1.21	238.17	3,598.35	-9.41	-23.60	6.46	0.12	0.07	4.82
3,700.00	1.11	239.23	3,698.33	-10.46	-25.33	7.30	0.10	-0.10	1.06
3,800.00	1.01	240.29	3,798.31	-11.39	-26.92	8.03	0.10	-0.10	1.06
3,900.00	1.03	244.68	3,898.30	-12.21	-28.50	8.65	0.08	0.02	4.39
4,000.00	1.05	253.08	3,998.28	-12.87	-30.19	9.09	0.15	0.02	8.40
4,100.00	1.14	255.16	4,098.26	-13.39	-32.03	9.38	0.10	0.09	2.08
4,200.00	1.23	253.25	4,198.24	-13.95	-34.02	9.70	0.10	0.09	-1.91
4,300.00	1.36	258.26	4,298.21	-14.50	-36.21	9.98	0.17	0.13	5.01
4,400.00	1.49	259.26	4,398.18	-14.99	-38.65	10.16	0.13	0.13	1.00
4,500.00	1.49	259.31	4,498.15	-15.47	-41.20	10.33	0.00	0.00	0.05
4,600.00	1.49	257.36	4,598.12	-16.00	-43.75	10.54	0.05	0.00	-1.95
4,700.00	1.58	259.27	4,698.08	-16.54	-46.37	10.76	0.10	0.09	1.91
4,800.00	1.67	259.18	4,798.04	-17.07	-49.16	10.95	0.09	0.09	-0.09
4,900.00	1.45	250.79	4,898.00	-17.76	-51.78	11.31	0.32	-0.22	-8.39
5,000.00	1.23	242.40	4,997.98	-18.67	-53.93	11.96	0.29	-0.22	-8.39
5,100.00	1.27	241.10	5,097.95	-19.70	-55.85	12.75	0.05	0.04	-1.30
5,200.00	1.30	241.80	5,197.93	-20.77	-57.82	13.57	0.03	0.03	0.70

Company:	COG Operating, LLC	**Local Co-ordinate Reference:**	Site Diamondback 22 State Com 4H
Project:	Eddy County, NM (NAD83)	**TVD Reference:**	Well @ 3011.00usft (Silver Oak 7)
Site:	Diamondback 22 State Com 4H	**MD Reference:**	Well @ 3011.00usft (Silver Oak 7)
Well:	4H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Surveys	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.00	1.28	241.98	5,297.90	-21.84	-59.81	14.38	0.02	-0.02	0.18
5,400.00	1.25	240.16	5,397.88	-22.90	-61.74	15.21	0.05	-0.03	-1.82
5,500.00	1.29	238.24	5,497.85	-24.04	-63.64	16.10	0.06	0.04	-1.92
5,600.00	1.34	234.33	5,597.83	-25.31	-65.55	17.14	0.10	0.05	-3.91
5,700.00	1.37	233.00	5,697.80	-26.71	-67.45	18.29	0.04	0.03	-1.33
5,800.00	1.40	229.67	5,797.77	-28.22	-69.34	19.56	0.09	0.03	-3.33
5,900.00	1.45	225.09	5,897.74	-29.91	-71.17	21.01	0.12	0.05	-4.58
6,000.00	1.49	222.52	5,997.71	-31.76	-72.94	22.63	0.08	0.04	-2.57
6,100.00	1.43	221.20	6,097.67	-33.66	-74.64	24.31	0.07	-0.06	-1.32
6,200.00	1.37	221.89	6,197.64	-35.48	-76.26	25.93	0.06	-0.06	0.69
6,300.00	2.08	217.06	6,297.60	-37.82	-78.15	28.02	0.72	0.71	-4.83
6,400.00	2.78	212.22	6,397.51	-41.32	-80.54	31.20	0.73	0.70	-4.84
6,500.00	2.27	202.32	6,497.41	-45.21	-82.59	34.80	0.67	-0.51	-9.90
6,600.00	1.77	192.43	6,597.35	-48.55	-83.67	37.99	0.61	-0.50	-9.89
6,700.00	1.93	176.12	6,697.30	-51.73	-83.89	41.13	0.55	0.16	-16.31
6,800.00	2.08	159.80	6,797.24	-55.12	-83.15	44.57	0.59	0.15	-16.32
6,900.00	2.86	157.71	6,897.14	-59.13	-81.58	48.75	0.79	0.78	-2.09
7,000.00	3.64	156.63	6,996.98	-64.35	-79.37	54.20	0.78	0.78	-1.08
7,100.00	3.65	155.25	7,096.78	-70.16	-76.78	60.28	0.09	0.01	-1.38
7,200.00	3.66	156.88	7,196.57	-75.98	-74.19	66.37	0.10	0.01	1.63
7,300.00	3.16	155.90	7,296.40	-81.43	-71.81	72.08	0.50	-0.50	-0.98
7,320.00	3.14	154.30	7,316.37	-82.43	-71.35	73.12	0.45	-0.10	-8.00
7,370.00	2.90	157.60	7,366.30	-84.83	-70.27	75.64	0.59	-0.48	6.60
7,402.00	2.70	157.30	7,398.26	-86.28	-69.68	77.14	0.63	-0.63	-0.94
7,434.00	4.20	137.60	7,430.20	-87.84	-68.59	78.82	5.91	4.69	-61.56
7,466.00	7.00	124.90	7,462.05	-89.82	-66.20	81.08	9.52	8.75	-39.69
7,497.00	9.80	122.60	7,492.71	-92.32	-62.43	84.03	9.10	9.03	-7.42
7,529.00	12.00	122.50	7,524.13	-95.58	-57.33	87.88	6.88	6.88	-0.31
7,561.00	14.40	122.80	7,555.28	-99.52	-51.18	92.54	7.50	7.50	0.94
7,593.00	16.80	125.60	7,586.10	-104.37	-44.07	98.22	7.86	7.50	8.75
7,625.00	19.00	126.50	7,616.55	-110.16	-36.13	104.94	6.93	6.88	2.81
7,657.00	21.00	126.80	7,646.62	-116.69	-27.35	112.49	6.26	6.25	0.94
7,689.00	24.30	127.50	7,676.15	-124.14	-17.53	121.08	10.35	10.31	2.19
7,721.00	27.70	131.80	7,704.91	-133.11	-6.76	131.29	12.14	10.63	13.44
7,752.00	31.10	134.80	7,731.91	-143.56	4.30	143.01	11.95	10.97	9.68
7,784.00	33.90	136.50	7,758.90	-155.86	16.31	156.68	9.20	8.75	5.31
7,816.00	37.10	136.90	7,784.95	-169.38	29.05	171.66	10.03	10.00	1.25
7,848.00	40.20	139.70	7,809.94	-184.31	42.33	188.09	11.12	9.69	8.75
7,880.00	44.10	140.40	7,833.66	-200.77	56.11	206.11	12.28	12.19	2.19
7,912.00	49.50	140.90	7,855.56	-218.80	70.89	225.81	16.91	16.88	1.56
7,943.00	53.20	142.70	7,874.92	-237.83	85.85	246.52	12.77	11.94	5.81
7,975.00	57.80	143.40	7,893.04	-258.90	101.70	269.37	14.49	14.38	2.19
8,007.00	63.00	143.40	7,908.84	-281.23	118.28	293.55	16.25	16.25	0.00

Company:	COG Operating, LLC	**Local Co-ordinate Reference:**	Site Diamondback 22 State Com 4H
Project:	Eddy County, NM (NAD83)	**TVD Reference:**	Well @ 3011.00usft (Silver Oak 7)
Site:	Diamondback 22 State Com 4H	**MD Reference:**	Well @ 3011.00usft (Silver Oak 7)
Well:	4H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Surveys	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,039.00	68.10	146.00	7,922.08	-305.01	135.10	319.20	17.57	15.94	8.13
8,070.00	69.50	147.80	7,933.29	-329.22	150.88	345.15	7.05	4.52	5.81
8,102.00	71.40	146.70	7,944.00	-354.58	167.19	372.31	6.76	5.94	-3.44
8,134.00	74.00	145.00	7,953.51	-379.85	184.34	399.49	9.58	8.13	-5.31
8,166.00	77.60	144.80	7,961.36	-405.23	202.18	426.85	11.27	11.25	-0.63
8,198.00	81.40	144.80	7,967.19	-430.94	220.31	454.57	11.88	11.88	0.00
8,230.00	84.60	144.40	7,971.09	-456.82	238.71	482.51	10.08	10.00	-1.25
8,261.00	84.90	145.10	7,973.93	-482.03	256.52	509.70	2.45	0.97	2.26
8,293.00	85.20	145.00	7,976.69	-508.16	274.79	537.86	0.99	0.94	-0.31
8,325.00	85.80	143.40	7,979.20	-534.04	293.45	565.82	5.33	1.88	-5.00
8,356.00	88.60	141.10	7,980.72	-558.51	312.40	592.42	11.68	9.03	-7.42
8,452.00	91.10	142.10	7,980.97	-633.74	372.03	674.36	2.80	2.60	1.04
8,547.00	87.40	145.10	7,982.21	-710.18	428.38	757.09	5.01	-3.89	3.16
8,643.00	89.40	148.10	7,984.89	-790.28	481.20	843.03	3.75	2.08	3.13
8,738.00	90.50	152.30	7,984.97	-872.70	528.40	930.59	4.57	1.16	4.42
8,834.00	89.00	153.00	7,985.39	-957.96	572.50	1,020.59	1.72	-1.56	0.73
8,930.00	89.70	144.10	7,986.48	-1,039.77	622.53	1,107.89	9.30	0.73	-9.27
9,026.00	90.50	153.20	7,986.32	-1,121.67	672.43	1,195.26	9.52	0.83	9.48
9,121.00	85.00	162.00	7,990.05	-1,209.31	708.56	1,286.65	10.91	-5.79	9.26
9,216.00	84.10	168.70	7,999.08	-1,300.75	732.47	1,380.32	7.08	-0.95	7.05
9,311.00	86.40	175.90	8,006.96	-1,394.50	745.14	1,474.92	7.93	2.42	7.58
9,406.00	87.20	183.30	8,012.27	-1,489.28	745.80	1,569.07	7.82	0.84	7.79
9,502.00	88.70	184.70	8,015.71	-1,584.98	739.10	1,663.24	2.14	1.56	1.46
9,597.00	89.90	185.00	8,016.87	-1,679.63	731.07	1,756.21	1.30	1.26	0.32
9,693.00	88.30	184.20	8,018.37	-1,775.31	723.38	1,850.23	1.86	-1.67	-0.83
9,788.00	87.20	184.30	8,022.10	-1,869.97	716.34	1,943.33	1.16	-1.16	0.11
9,884.00	88.50	183.80	8,025.71	-1,965.66	709.57	2,037.49	1.45	1.35	-0.52
9,979.00	89.70	183.80	8,027.20	-2,060.44	703.27	2,130.79	1.26	1.26	0.00
10,075.00	89.20	183.80	8,028.12	-2,156.23	696.91	2,225.08	0.52	-0.52	0.00
10,170.00	89.10	183.60	8,029.53	-2,251.02	690.78	2,318.42	0.24	-0.11	-0.21
10,265.00	89.60	183.40	8,030.61	-2,345.83	684.98	2,411.83	0.57	0.53	-0.21
10,361.00	88.30	183.40	8,032.37	-2,441.65	679.29	2,506.23	1.35	-1.35	0.00
10,457.00	88.60	183.60	8,034.96	-2,537.43	673.43	2,600.59	0.38	0.31	0.21
10,552.00	88.10	183.40	8,037.70	-2,632.21	667.63	2,693.96	0.57	-0.53	-0.21
10,647.00	88.50	183.30	8,040.52	-2,727.01	662.08	2,787.37	0.43	0.42	-0.11
10,743.00	89.30	182.90	8,042.36	-2,822.85	656.89	2,881.87	0.93	0.83	-0.42
10,838.00	90.40	183.60	8,042.61	-2,917.70	651.51	2,975.35	1.37	1.16	0.74
10,933.00	91.50	184.20	8,041.03	-3,012.46	645.05	3,068.62	1.32	1.16	0.63
11,029.00	89.00	182.40	8,040.61	-3,108.29	639.52	3,163.06	3.21	-2.60	-1.88
11,124.00	88.50	182.20	8,042.69	-3,203.19	635.71	3,256.79	0.57	-0.53	-0.21
11,220.00	88.30	182.00	8,045.37	-3,299.09	632.19	3,351.54	0.29	-0.21	-0.21
11,316.00	88.70	182.00	8,047.88	-3,395.00	628.84	3,446.33	0.42	0.42	0.00
11,411.00	88.90	181.90	8,049.87	-3,489.92	625.61	3,540.15	0.24	0.21	-0.11
11,506.00	89.10	182.40	8,051.53	-3,584.84	622.05	3,633.93	0.57	0.21	0.53

Company:	COG Operating, LLC	**Local Co-ordinate Reference:**	Site Diamondback 22 State Com 4H
Project:	Eddy County, NM (NAD83)	**TVD Reference:**	Well @ 3011.00usft (Silver Oak 7)
Site:	Diamondback 22 State Com 4H	**MD Reference:**	Well @ 3011.00usft (Silver Oak 7)
Well:	4H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Surveys	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,602.00	89.70	183.40	8,052.53	-3,680.71	617.19	3,728.49	1.21	0.63	1.04
11,697.00	90.70	181.70	8,052.20	-3,775.61	612.97	3,822.17	2.08	1.05	-1.79
11,796.00	84.60	185.40	8,056.26	-3,874.27	606.85	3,919.35	7.20	-6.16	3.74
11,891.00	85.60	188.20	8,064.38	-3,968.25	595.64	4,011.26	3.12	1.05	2.95
11,985.00	86.50	186.30	8,070.85	-4,061.27	583.81	4,102.15	2.23	0.96	-2.02
12,080.00	87.70	186.10	8,075.66	-4,155.59	573.56	4,194.52	1.28	1.26	-0.21
12,176.00	87.80	187.00	8,079.43	-4,250.89	562.62	4,287.77	0.94	0.10	0.94
12,271.00	89.70	185.60	8,081.50	-4,345.29	552.20	4,380.20	2.48	2.00	-1.47
12,367.00	89.80	185.40	8,081.92	-4,440.85	543.00	4,473.92	0.23	0.10	-0.21
12,462.00	89.90	185.60	8,082.17	-4,535.41	533.89	4,566.67	0.24	0.11	0.21
12,558.00	91.10	186.10	8,081.33	-4,630.90	524.11	4,660.26	1.35	1.25	0.52
12,653.00	92.20	186.30	8,078.59	-4,725.31	513.85	4,752.71	1.18	1.16	0.21
12,749.00	92.50	186.60	8,074.66	-4,820.62	503.08	4,846.00	0.44	0.31	0.31
12,776.00	92.70	186.30	8,073.43	-4,847.42	500.05	4,872.23	1.33	0.74	-1.11
12,819.00	92.70	186.30	8,071.41	-4,890.11	495.34	4,914.03	0.00	0.00	0.00

PTB at TD @ 12819' MD 92.70° INC 186.30° AZM 8071.41° TVD

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
12,819.00	8,071.41	-4,890.11	495.34	PTB at TD @ 12819' MD 92.70° INC 186.30° AZM 8071.41° TVD

Checked By: _____ Approved By: _____ Date: _____